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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,415	07/17/2003	Heinz-Peter Burkle	Q76517	9605

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EXAMINER	
PATEL, AJIT	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,415	BURKLE ET AL.	
	Examiner	Art Unit	
	AJIT G. PATEL	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, line 5, the recitation "(optional)" should be deleted. Same error appears in lines 6,11,12,15,16,17,19,20 and 21. Same rejection can be applied to claims 5 and 6.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Yeap et al (WO 02/45383)

Regarding claims 1-3, Yeap disclose an apparatus for connecting digital subscriber lines to central equipment comprising a Digital Subscriber Line Access System for providing a plurality of digital subscriber lines comprising at least one Digital Subscriber Line Access Multiplexer, hereafter referred to as DSLAM, realized by a DSL Central Termination Unit (13 of fig. 21), hereafter referred to as DTU-C, at least one Remote Termination Unit (OPI Subsystem of fig. 21), hereafter referred to as DTU-R, and transmission network connecting the DTU-Cs and the at least one DTU-R, the at least one DTU-R comprising an analog front end (AFE) (29 of fig. 21) for each of the

plurality of DSL lines, for converting DSL signals, a multiplexer/de-multiplexer unit (130 of fig. 21) for combining and separating multiple converted DSL signals, a network interface (the connection between central office 13 and OPI subsystem) for transmitting and receiving combined multiple converted DSL signals, and the transmission network transmitting said combined multiple converted DSL signals, and a DTU-C comprising a network interface (the connection between central office 13 and OPI subsystem) for transmitting and receiving said combined multiple converted DSL signals, a multiplexer/de-multiplexer unit (58/59 of fig. 21) for combining and separating said multiple converted DSL signals, and a digital back end (30 of fig. 5) for each DSL line, for modulating and de-modulating the converted DSL signal, and a line interface, wherein the DTU-R comprises for upstream an analog-to-digital converter (30 of fig. 21) for each DSL line, for digitizing modulated electrical DSL line signal, a signal processor (30 of fig. 21) per DSL line, for converting the digitized electrical modulating DSL line signal, a multiplexer (130 of fig. 21), for combining the converted digitized electrical modulated DSL line signals, an electrical-to-optical converter (33 of fig. 21), for framing and converting the multiplexed converted digitized electrical modulated DSL line signal into an optical signal, said transmission network being an optical network, transmitting said optical signal, and the DTU-C comprising for upstream an optical-to-electrical converter (34 of fig. 21), for converting and de-framing the optical signal into the multiplexed converted digitized electrical modulated DSL line signal, a demultiplexer (58/59 of fig. 21), for separating the converted digitized electrical modulated DSL line signals, a signal processor (53 of fig. 5) for each DSL line, for converting and

demodulating the converted digitized electrical modulated DSL line signal for a line interface module, and the DTU-C comprising for downstream a signal processor (53 of fig. 5) for each line interface, for modulating and converting digitized electrical DSL line signals, a multiplexer (58/59 of fig. 21) for combining the converted digitized electrical modulated DSL line signals, an optical-to-electrical converter, for converting and framing the multiplexed converted digitized electrical modulated DSL line signal into an optical signal, and the DTU-R comprising for downstream an electrical-to-optical converter (33 of fig. 21), for de-framing and converting the optical signal into the multiplexed converted digitized electrical modulated DSL line signal, a de-multiplexer (130 of fig. 21), for separating the converted digitized electrical modulated DSL line signals, a signal processor (30 of fig. 21) for each DSL line, for converting the converted digitized electrical modulated DSL line signal, a digital-to-analog converter (30 of fig. 21) for each DSL line, for converting the digitized electrical modulated DSL signal into an electrical modulated DSL signal.

Regarding claims 4-6, Yeap disclose DSL Access System wherein the DTU-R's Digital Signaling Processor, hereafter referred to as DSP, comprises for upstream an up-sampling unit, followed by an RF ingress cancellation unit, followed by a band-pass pair, followed by a down converter for each split path (optional), an adding unit, and followed by a heavy down sampling unit (optional), and an optional nonlinear quantization compression unit, and the DTU-C's DSP comprises for upstream an optional nonlinear quantization compression unit, followed by a heavy up-sampling unit, followed by a band-pass pair, followed by a down converter for each split path

(optional), an adding unit, and followed by a down sampling unit (optional), and the DTU-R's DSP comprises for downstream an optional nonlinear quantization compression unit, followed by a heavy up-sampling unit, followed by a band-pass pair, followed by an equalizer (optional), and a down converter for each split path (optional), an adding unit, and followed by a down sampling unit (optional), and the DTU-C's DSP comprises for downstream an up-sampling unit, followed by an equalizer (optional), followed by a band-pass pair, followed by a down converter for each split path (optional), an adding unit, and followed by a heavy down sampling unit (optional) and an optional nonlinear quantization compression unit (page 1, line 27-page 3, line2; page 9, line 2 – line 11, page 10, line 23 – page 12, line 6; fig. 3).

4. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibutani (EP 1176837).

Shibutani disclose fiber optic subscriber transmission system comprising a Digital Subscriber Line Access System for providing a plurality of digital subscriber lines comprising at least one Digital Subscriber Line Access Multiplexer, hereafter referred to as DSLAM, realized by a DSL Central Termination Unit (30 of fig. 2), hereafter referred to as DTU-C, at least one Remote Termination Unit (20 of fig. 2), hereafter referred to as DTU-R, and transmission network connecting the DTU-Cs and the at least one DTU-R, the at least one DTU-R comprising an analog front end (AFE) (150, 151 of of fig. 2) for each of the plurality of DSL lines, for converting DSL signals, a multiplexer/de-multiplexer unit (160, 170 of fig. 2) for combining and separating multiple converted

DSL signals, a network interface (60a, 60b of fig. 2) for transmitting and receiving combined multiple converted DSL signals, and the transmission network transmitting said combined multiple converted DSL signals, and a DTU-C comprising a network interface (60a.60b of fig.2) for transmitting and receiving said combined multiple converted DSL signals, a multiplexer/de-multiplexer unit (340,350 of fig. 2) for combining and separating said multiple converted DSL signals, and a digital back end (para. 0057) for each DSL line, for modulating and de-modulating the converted DSL signal, and a line interface, wherein the DTU-R comprises for upstream an analog-to-digital converter (150a, 150b of of fig. 5) for each DSL line, for digitizing modulated electrical DSL line signal, a signal processor (500,510a, 510b,520,530--- of fig. 4) per DSL line, for converting the digitized electrical modulating DSL line signal, a multiplexer (160,170 of fig.4), for combining the converted digitized electrical modulated DSL line signals, an electrical-to-optical converter (130,140 of fig. 4), for framing and converting the multiplexed converted digitized electrical modulated DSL line signal into an optical signal, said transmission network being an optical network, transmitting said optical signal, and the DTU-C comprising for upstream an optical-to-electrical converter (300,310 of fig. 5), for converting and de-framing the optical signal into the multiplexed converted digitized electrical modulated DSL line signal, a demultiplexer (340,350 of fig. 5), for separating the converted digitized electrical modulated DSL line signals, a signal processor (710,700a,700b,360a,360b,720 --- of fig. 5) for each DSL line, for converting and demodulating the converted digitized electrical modulated DSL line signal for a line interface module, and the DTU-C comprising for downstream a signal processor

(710,700a,700b,360a,360b,720 --- of fig. 5) for each line interface, for modulating and converting digitized electrical DSL line signals, a multiplexer (340,350 of fig.5) for combining the converted digitized electrical modulated DSL line signals, an optical-to-electrical converter (300,310 of fig. 5), for converting and framing the multiplexed converted digitized electrical modulated DSL line signal into an optical signal, and the DTU-R comprising for downstream an electrical-to-optical converter (130,140 of fig. 4), for de-framing and converting the optical signal into the multiplexed converted digitized electrical modulated DSL line signal, a de-multiplexer (160,170 of fig. 4), for separating the converted digitized electrical modulated DSL line signals, a signal processor (500,510a, 510b,520,530--- of fig. 4) for each DSL line, for converting the converted digitized electrical modulated DSL line signal, a digital-to-analog converter (150a,150b of fig. 4) for each DSL line, for converting the digitized electrical modulated DSL signal into an electrical modulated DSL signal (see para. 39-66).

Regarding claims 4-6, Yeap disclose DSL Access System wherein the DTU-R's Digital Signaling Processor, hereafter referred to as DSP, comprises for upstream an up-sampling unit, followed by an RF ingress cancellation unit, followed by a band-pass pair, followed by a down converter for each split path (optional), an adding unit, and followed by a heavy down sampling unit (optional), and an optional nonlinear quantization compression unit, and the DTU-C's DSP comprises for upstream an optional nonlinear quantization compression unit, followed by a heavy up-sampling unit, followed by a band-pass pair, followed by a down converter for each split path (optional), an adding unit, and followed by a down sampling unit (optional), and the

DTU-R's DSP comprises for downstream an optional nonlinear quantization compression unit, followed by a heavy up-sampling unit, followed by a band-pass pair, followed by an equalizer (optional), and a down converter for each split path (optional), an adding unit, and followed by a down sampling unit (optional), and the DTU-C's DSP comprises for downstream an up-sampling unit, followed by an equalizer (optional), followed by a band-pass pair, followed by a down converter for each split path (optional), an adding unit, and followed by a heavy down sampling unit (optional) and an optional nonlinear quantization compression unit (para. 39-66).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AJIT G. PATEL whose telephone number is 571-272-3140. The examiner can normally be reached on MONDAY- FRIDAY.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP

Ajit Patel
Primary Examiner